

INTERAGENCY COORDINATION IN THE CASE OF AN INTENTIONAL AGROTERRORIST INCIDENT

BY

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AGROTERRORIST INCIDENT**

by

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Topic Approved By
Kevin P. Reynolds

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Agriculture in the United States has a tremendous importance in the economic well being of the country. Agroterrorism is defined as an attack against livestock or crops. Though an agroterrorist incident doesn't make the same statement as an attack against human targets, it would be fairly easy to perform. United States agriculture is particularly susceptible in an intentional terrorist event. Though there are many directives and plans in place to protect the country in case of an agroterrorist event, there are still some areas of concern. Communication and coordination are the primary concerns. In an emergency response in agriculture there are many organizations and governmental agencies responding. In past natural incidents, such as food borne illness, there was much confusion about what roles each group should play. This manuscript will evaluate the steps that have been taken to ensure a more coordinated response in the event of an agricultural incident, and why the "lessons learned" are repeated. In addition, recommendations for reducing repeated errors in coordination are proposed.

INTERAGENCY COORDINATION IN THE CASE OF AN INTENTIONAL AGROTERRORIST INCIDENT

Agriculture in the United States has a tremendous importance in the economic well being of the country. U.S. agriculture generates more than \$1 trillion in economic activity, \$50 billion of which comes from exports.¹ The share of U.S. agricultural products sold overseas is more than double that of other U.S. industries.² An estimated 15% of the population is employed directly or indirectly by agricultural activities and the productivity and efficiency of food production in the U.S. relates to the significantly smaller percentage of income Americans spend on food compared to the rest of the world.³ Agriculture accounts for almost 13% of the nation's Gross national product.⁴ The United States government recognized the importance of agriculture, including food production, to this country when it was recognized as part of the nation's critical infrastructure and key resources and was included in the National Infrastructure Protection Plan and the National Response Framework.

Agroterrorism is defined by the Congressional Research Service "as the deliberate introduction of an animal or plant disease with the goal of generating fear, causing economic losses, and/or undermining social stability."⁵ The National Response Plan has determined that a food and agricultural incident may threaten public health, animal nutrition, food production, aquaculture, livestock production, wildlife, soils rangelands, and agricultural water supplies.⁶ Some experts do not include food as a target of agroterrorism, but because an attack on livestock or plant crops will severely affect food production, and the government categorizes food and agriculture together, for this review food security will be included as a possible component of agroterrorism.

Biological agents were used against livestock during the First World War and some countries experimented with agents that affect livestock and crops in the years since then. Many experts feel that a biological attack against the U.S. agricultural and food infrastructure is increasingly possible and that there are key vulnerabilities within that infrastructure that make it susceptible.⁷

In many instances of contagious diseases in livestock, recognition, containment and elimination are tremendous endeavors requiring the participation of many individuals and organizations. Appendix A of the Critical Infrastructure and Key Resources Support Annex of the National Response Framework designates the Department of Agriculture (USDA) and Health and Human Services (HHS) as the primary agencies coordinating protection, response and recovery in the case of a major incident that effects agriculture and food.⁸ In the event of a major agricultural incident, these are not the only organizations involved. Farmers and local veterinarians must first recognize that there is a problem and notify the county and state public health systems. Those levels of government, including laboratories and government veterinarians, must also recognize the potential situation. The Centers for Disease Control (CDC), Department of Homeland Security (DHS), Department of Justice, Department of the Interior, and the Department of Defense might all be involved in a response to a large-scale agricultural incident. Because of this the complexity of coordinating a response in a timely and effective manner becomes a huge undertaking. The purpose of this manuscript is to evaluate the steps that have been taken to ensure a more coordinated response in the event of an agricultural incident, and why the “lessons learned” are

repeated. In addition, recommendations for reducing repeated errors in coordination are proposed.

There are many ways agriculture is susceptible to terrorist attacks. Farms are generally unsecured areas that make it difficult to prevent parts of them from being intentionally contaminated. In addition, livestock is often concentrated in relatively small areas as part of the finishing process. For example, cattle are often sent to feedlots prior to slaughtering, and these are concentrated in the central United States. The top three hog producing states produce over 50% of U.S. hogs.⁹ This makes a large portion of the industry susceptible to smaller amounts of contaminants.

There are a large number of contagious biological agents that can affect animals and plants. Most of these do not affect humans, but they are often endemic in the environment somewhere in the world, so they can be easily accessed and cultured with relatively little danger to the person performing the procedure. These agents can be deployed with little effect to the person deploying it. Because the United States has eradicated many of the diseases endemic in other areas of the world, many veterinarians and scientists are less able to recognize a manifestation of a foreign animal or plant disease.

In the production of animals, plants and foods, live and raw products are often comingled with processed products in the transportation and production processing system. This can increase the speed of contamination of the food supply, overcoming natural barriers. Because international trade is often based on the disease-free status of the commodity, even a rumor of possible contamination can lead to trade embargoes,

a drop in domestic consumption, disruption in commodities markets, and often takes months or years to recover.

Most experts believe that the primary impact of an agroterrorist incident would be economic. The direct costs are related to the expense involved in containment of the disease, eradication, compensation and lost production. Indirect costs are related to losses experienced by agriculturally dependent businesses, such as farm suppliers, grocery retailers, and the restaurant industry. As mentioned previously, a large amount of U.S. agricultural income relies on exportation of product to other parts of the world. If embargoes are in place, not only can the U.S. economy be affected, but also the potential exists for food prices in some developing countries to be affected. This might result in political unrest in that nation with the potential for impacting U.S. national security.

In the event of an agroterrorist incident in the U.S., political upheaval could result from a lack of consumer confidence in the ability of the government to protect them. In addition, the eradication and disposal of large numbers of animal carcasses can lead to a negative political response if not handled appropriately. From a terrorist's perspective, the best result of intentional contamination of an agricultural product is the fear that would result, possibly undermining social stability.

An example of how an agricultural incident in the U.S. can effect national security was seen when South Korea erupted into riots and political upheaval as the USDA and the South Korean government negotiated the resumption of the sale of U.S. beef in the country after S. Korea had banned imports due to the presence of bovine spongiform encephalitis (BSE) in an animal in the United States. Bovine spongiform encephalitis is

very rarely spontaneously produced in cattle and is transmitted primarily by ingestion of contaminated feed. It is a disease that progresses slowly and is only seen in animals over 30 months old, much older than most cattle used in meat production. Ingestion by humans of meat products contaminated with BSE is connected to the development of a variant of a human disease similar to BSE, called variant Creutzfeldt-Jakob Disease (vCJD). Creutzfeldt-Jakob Disease occurs spontaneously in humans. It is seen primarily in older patients and has a long degenerative period before death occurs. However, vCJD occurs in much younger patients and the neurological degeneration occurs much more rapidly before death occurs.

In the incident mentioned above, only one animal in the U.S. was detected with BSE, and generally after a waiting period where intensive testing is performed to determine the presence of any other infected animals, trade embargoes are lifted. South Korea was under intense pressure by the populace not to lift the trade embargoes in place against the U.S. with violent rioting occurring. When Korean President Lee Myung-bak visited the U.S. in April 2007, he was brokering a free trade agreement between the two countries. He was only in power for 40 days prior to the visit, and it was felt that he needed to retain as much political capital as possible.¹⁰ If he lifted the ban, he would face political pressure from within the country. The U.S. told him unless beef trading was resumed, the free trade agreement would not be discussed, and if the agreement was not approved prior to the departure of the Bush administration, it might not be approved at all due to disapproval in Congress at the time.

Prior to 2001, officials recognized that agroterrorism was a possibility but minimal funding and regulatory efforts were designated to prevention. After 2001, the possibility of terrorists focusing on agriculture was taken more seriously. When the Homeland Security Act of 2002 established the responsibility of coordinating efforts to protect the nation against terrorism to the Department of Homeland Security (DHS), it also transferred the agricultural inspectors from the USDA to the DHS.¹¹ This gave DHS the responsibility of preventing infectious diseases and pests from entering the United States. The Homeland Security Presidential Directive (HSPD) – 9 went further in defining how government agencies will work together in the protection of agriculture and food.¹² The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (The Bioterrorism Act of 2002) expanded the responsibilities of the USDA and HHS by giving those agencies the authority to regulate biohazardous agents that threaten public health, animals, plants and products made from animals and plants.¹³

The National Infrastructure Protection Plan (NIPP) was born from the HSPD-7, and established policy for enhanced protection of national critical infrastructure and key resources (CI/KR).¹⁴ The NIPP delineates the roles and responsibilities for all participants in protecting critical infrastructure. The USDA's responsibilities include agriculture and meat, poultry and egg products. The Department of Health and Human Services is responsible for food other than meat, poultry and egg products.

The National Response Plan and the subsequent National Response Framework also delineate the responsibilities of the USDA and HHS in the event of a food or agriculture incident. Other steps are being taken by federal agencies to better manage the risk of agroterrorism, including the development of standard protocols between

agencies; conducting test exercises and vulnerability assessments; creating laboratory networks and working groups; development of a National Veterinary Stockpile of vaccines needed to respond to animal diseases; and funding of research addressing issues related to agroterrorism.¹⁵

There are many challenges associated with responding to an agricultural incident, whether it is a natural outbreak or an intentional incident. They include lack of personnel able to recognize a foreign animal disease outbreak, difficulty with vaccination and vaccination stockpiling, and difficulty detecting a covert attack and differentiating it from a natural outbreak with the current surveillance and diagnostic methods available.

Early reporting of an outbreak of an animal or plant disease is essential to controlling it. Because of the current methods of farming and processing of food products, including transportation, if there are not enough personnel trained to recognize the significant diseases, the illness can spread rapidly. Foreign animal disease diagnosticians are essential as part of the initial investigation in an animal disease outbreak. According to the 2005 GAO report, there are not enough veterinarians trained to recognize these diseases.¹⁶ In addition there are significantly decreased numbers of people entering the veterinary profession, especially food animal husbandry, with a resulting decrease in the emphasis of teaching about foreign animal diseases in veterinary school curricula.¹⁷ Another aspect of educating professionals to recognize specific disease symptoms is that the pathology of the disease needs to be understood. This will enable prompt, effective treatment. This is true of the veterinary and plant pathologist communities, as well as human doctors dealing with a potentially

zoonotic disease. In the anthrax cases of 2001, one lesson learned was that there was an insufficient knowledge about the pathology and subsequent effective treatment of the disease caused by anthrax, leading to excessive use of antibiotic therapy.¹⁸ This resulted in a very costly treatment severely decreasing available supplies of medication.

In the United States, surveillance for the presence of unusual diseases or an increase in the number of cases of an endemic disease is done with a passive system. The farmer is usually the first to recognize that he might have a problem on his farm. He calls his local veterinarian, who goes to the farm to see what he can do. If the veterinarian recognizes the possibility of an unusual illness, he notifies the State veterinarian. In many instances, the farmer might be reluctant to tell anyone that he is having problems. In the Exotic Newcastle disease outbreak in California in 2002 for example, the disease first broke out in roosters used as fighting cocks on small backyard farms. Because fighting roosters is illegal, it made finding the infected or exposed birds more difficult because the farmers feared prosecution. As a result of this outbreak, over three million birds were destroyed in five states.¹⁹ In addition, biosecurity measures and surveillance at many farms and food processors lacks consistency and is generally inadequate.²⁰

Epidemiology is used to conduct an outbreak investigation. Unfortunately, there are no standardized approaches in place to collect and analyze the data, and there are no mechanisms in place to tap the expertise in industry.²¹ If there is an outbreak in animals of a disease transmissible to humans, there might be a concurrent outbreak in humans. In the current system there is little to no overlap in human and animal reporting systems, so a disease might go uncontrolled for some time before a

correlation is recognized, or there might be a duplication of effort, slowing the investigation.²² Integration of laboratory databases within the USDA is progressing slowly, so the agency finds it difficult to analyze data from around the country to detect trends and implement a response.²³ Laboratories overseen by other government agencies have difficulty sharing data because their databases are often operated with different software and cannot easily be integrated.²⁴

Some people feel that the use of rapid diagnostic tools on site will decrease the number of animals that have to be destroyed in the case of an outbreak. Though technology is rapidly advancing, there are still few rapid, accurate screening tests available for foreign animal diseases. There are also concerns about spreading a disease due to the use of live virus to perform some rapid test methods. Most of the currently used rapid methods involve testing for DNA using polymerase chain reactions. These tests are real-time and fairly quick to perform, but it does require specialized training to prepare samples and to interpret results. Also, environmental contamination is possible unless specific cautionary measures are taken.

The movement of food products, animals and animal products throughout the processing system is dramatic. At this time, "there is no effective system for ensuring rapid government access to critical traceback information."²⁵ Animal tracking requirements are poor and often records of sale are poor or absent.²⁶ Traceback and tracking are important to determine the origin of an outbreak, enabling the investigator to determine if the disease started in one location or multiple locations. Determination of the initial case can help determine if the outbreak is natural or intentional, and how many animals have been exposed.

Another issue in the nation's surveillance system is that there are fewer inspections and interceptions by agricultural inspectors at some ports of entry into the U.S.²⁷ When the DHS was created, the agricultural inspectors who were originally supervised by the USDA, became DHS assets. To maintain flexibility in the immigration and importation inspections, all of these inspectors are cross-trained to perform other responsibilities, and might then be unavailable to perform agricultural inspections.²⁸ Sometimes information about high-risk cargo that is entering the country does not flow to the inspectors in a timely manner, allowing some shipments of questionable cargo to miss inspection.²⁹

Vaccination stockpiles are recommended in the case of a disease outbreak where vaccines might be effective in decreasing the number of animals that need to be culled. One issue with vaccines is that vaccinated animals often test positive with current test methods, making them indistinguishable from naturally infected or exposed animals. Because of this, international trade regulations often prohibit importation of vaccinated animals. Some animal diseases have no vaccine available, or like avian flu viruses, can mutate rapidly enough to prevent current vaccines from being effective. Stockpiling enough vaccine is difficult, due to short-shelf life, and vaccines are often stored in concentrated form, requiring reconstitution prior to use.³⁰

The biggest challenge to responding to a major agricultural incident is coordination between the key stakeholders. The 2005 Government Accounting Office (GAO) report cites weaknesses in the flow of critical information including the creation of a response plan that is unrealistic regarding the ability of states' capabilities; after action reports are not being shared systematically among the key players; states and industry

are not receiving national guidance in a timely manner; and insufficient guidance to states to allocate homeland security grant funding for agriculture.³¹ The 2008 GAO Emergency Management Report demonstrating the preparedness of DHS to respond to a catastrophic event still describes a need to better integrate stakeholders into the planning and development of national policies and guidelines.³² For example, “key non-federal stakeholders, such as state and local governments, were not directly involved in developing the National Pandemic Strategy and Implementation Plan, even though these stakeholders are expected to be primary responders to an influenza pandemic.”³³ In the case of an avian influenza/pandemic influenza outbreak, there are many shared leadership roles and responsibilities, and additional bureaucratic positions through the chain of command, making the leadership structure even more complex and uncertain.³⁴ It has also been noted that the communication between agricultural producers and state emergency management regulators can be confusing and rudimentary with a lack of guidelines designating the appropriate contacts in the case of a serious infectious disease outbreak.³⁵

Communication must be considered, and can be included as part of coordination. This also includes public awareness announcements. One lesson learned on a repeated basis demonstrates the need to have accurate, rapid information given to media sources, to reassure the public that steps are being taken to alleviate or eradicate the situation.

The United States has not experienced a major agricultural incident, but there are many natural disasters, food-borne illness outbreaks, and training exercises that demonstrate the confusion between emergency responders. Top official (TOPOFF)

exercises are designed to test and improve emergency preparedness and response management at the top levels of state, federal and international governments, with the lessons learned demonstrating the measurements of decision making at the tactical level.³⁶ A repeated lesson learned from these exercises is that the emergency operations centers often feel disconnected from the incident command level resulting in a breakdown of information flow and integration between the two levels.³⁷ The after action report from TOPOFF 4 also found that multiple unified commands had no standard command structures, limiting coordination and communication to all levels.³⁸

The TOPOFF 4 lesson demonstrated a common complaint found after many disaster response exercises or real life experiences. An analysis of the anthrax attacks showed that there was a lack of a clear chain of command that slowed the management and clean-up processes.³⁹ One of the lessons learned from the Special Event Food Defense Assignment (SEFDA), an effort to prepare for the protection of food served during the political party conventions and to develop a template for future events, was that participants were unclear on what roles they would play.⁴⁰

An excellent example of how important interagency coordination is in responding to an agricultural incident is the response to a major food-borne illness outbreak. In 2008, there was an outbreak of the bacteria *Salmonella typhimurium* St. Paul. The first cases were noted on 21 May 2008 and the outbreak was declared over on 28 August 2008. In that time period over 1400 persons were infected, with a common feeling that underreporting makes the final number of infected persons much higher.⁴¹ In early June, the FDA initially reported that certain types of raw tomatoes were the culprit produce. In July, the FDA reported that tomatoes were not suspect, that the produce in

question was jalapeno and Serrano peppers. In that month the tomato industry lost millions of dollars and in Florida and Georgia alone over \$114 million was lost.

An analysis of the outbreak response demonstrated major organizational shortcomings. The dozens of public health departments involved, from local and state public health departments and labs to federal food inspection agencies, labs and regulatory bodies, made coordination of the multi-state outbreak an issue.⁴² There was no single federal agency or official clearly in charge or accountable. Though collaboration occurred in an ad hoc manner, there were no established mechanisms in place to ensure cooperation.⁴³

A study of the epidemic curve the FDA issued in its consumer advisory on 7 June 2008, the CDC reported that 145 people were infected since mid-April, but the CDC's final report after the outbreak showed that by 7 June over 800 persons had been infected.⁴⁴ On 21 May 2008, the New Mexico state laboratory confirmed 3 cases of *Salmonella* Saint Paul with the identical genetic fingerprint and they notified the CDC within one day. By 23 May 2008, other states had cases and were in contact with each other and the CDC. It took the CDC 3 more days to contact the FDA with this information.⁴⁵ When the FDA was approached about the delay in reporting data and confirmation of cases, the reason given was the response capacity was strained. Other questions that arise from this episode are how quickly is data shared between agencies; is relevant data being fully shared; and is initial lab work being reviewed and shared between agencies? All these relate to coordination and communication issues.

This outbreak also demonstrated a dichotomy between the epidemiological investigation and the traceback investigation. The CDC conducts epidemiological

investigations and the FDA is responsible for traceback scrutiny, and they are treated as two separate processes.⁴⁶ As a result, significant integration between agencies is required. In addition, there are no standard protocols for collection and analysis of epidemiological data and conflicting interests and policies within federal agencies often obstruct flow of information and data.⁴⁷

Finally, this outbreak demonstrated how poor communication to the public could affect confidence in the government. Information to the public in an emergency should be accurate and consistent, with clear recommendations. In this outbreak, information came from multiple organizations and often carried different messages. A review of press releases demonstrated a lack of consensus among the public health agencies on what information needed to be communicated to the public and possible even about the level of risk posed to them.⁴⁸ Additional inconsistencies were provided to the media as a result of differing organizational policies and standards associated with confidentiality and legal restrictions.⁴⁹

The United States government has taken many steps to ensure a rapid, effective response in the case of a major catastrophe. It included food and agricultural incidents in those plans, but despite many mandates, exercises, and natural outbreaks enabling training, the lessons learned are often repeated. The government is able to recognize when a problem exists and responds with new policies and reforms. “Too often, we declare victory as soon as the ink of the president’s signature is dry. Too often, we neglect the job of making things work.”⁵⁰

Coordination and communication between all key stakeholders responding to a major agricultural incident will be essential to prevent tremendous financial loss and

political unrest. There is a need for a unified command, or one that ensures that key decision makers are on the same page, as well as a clear chain of command among decision makers.⁵¹ All key stakeholders must be involved in the process, from planning to execution. This includes all local, state and federal government agencies, as well as private industry. If vaccine production is to be increased in the event of a pandemic incident or an outbreak of a foreign animal disease, the companies producing that vaccine should be included in the planning and training exercises, at least to determine capabilities in an emergency event. Also, there is an abundance of technical expertise in private industry and academia that can and should be called on to assist in an emergency event. If it is determined that these people will be asked to participate, they should also be part of the planning process. This will ensure the logistical considerations are considered and prevent surprises for everyone.

There are positive examples of multiple organizations working together in a crisis situation. On September 11, the agencies around and within the Pentagon agreed in advance who would be in charge in case of a major incident.⁵² “They worked effectively in a tightly knit horizontal network instead of struggling over a vertical chain of command.”⁵³ In Alamosa County, Colorado, there was a large Salmonella outbreak from contaminated water. There were multiple local and state organizations working together to ensure the public health safety of the community involved, including private utilities and wastewater management companies. The reasons given for the success of this operation was Colorado’s Water/Wastewater Agency Response Network (COWARN), a web-based mutual-aid system for water and wastewater emergencies;

the housing of state public health and environmental staff in one agency, presenting a unified approach; and preparedness funding and emergency preparedness exercises.⁵⁴

Another incident with a positive outcome was an incident in Wisconsin where the local police were notified anonymously that feed products at a rendering plant were contaminated with a pesticide and it would lead to large-scale animal mortality. State and federal agencies were notified of the potential problem, and samples from the rendering plant were analyzed. Records were reviewed to determine the extent of the problem. It was discovered that chlordane had been added to the liquid fat, and that about 4000 farmers had been sent contaminated product in four different states.⁵⁵ Additionally, milk from these farms had been sent to many dairy plants to be process further. State and federal agencies became involved and within two days, all major customers were notified and the feed replaced.⁵⁶ In this case, even though there was a coordinated response there was still an estimated value of \$4 million worth of product disposal.⁵⁷

All of these positive examples are relatively small compared to the national outbreak of Salmonella in 2008. They demonstrate however, that with prior planning on who will be in charge, what responsibilities each organization will have, and practicing at all levels, including the strategic level.

Better surveillance and traceback systems can be implemented with closer coordination between organizations. Recommendations made in the 2005 GAO report are for the Secretaries of Homeland Security and Agriculture to work together to find why the numbers of agricultural inspections has decreased, and to expedite the integration of their databases and information technology systems.⁵⁸ The integration of

databases should not stop with only the USDA and DHS. The CDC and HHS are key federal organizations who would be involved in a major agricultural incident if food and other public health concerns were involved. It should be mandated that all these agencies would have integrated databases to make information sharing more efficient.

If vaccine stockpiling is to be pursued, close coordination with private industry is essential. The industry will be expected to increase production substantially if necessary. When stockpiled vaccines expire prior to use, industry will be expected to provide updated stock. For these reasons, the pharmaceutical industry producing vaccines becomes a key stakeholder, and should be consulted when making emergency response plans.

There are many positive things happening to protect the nation's agricultural and food production infrastructure. In the case of a major agricultural incident however, it is questionable whether the nation will be able to respond in an efficient and timely manner. The main problem, and one that is repeated in after action reviews from exercises and natural disaster experiences, is the lack of coordination and communication between the multiple agencies expected to respond. There must be continued diligence from the leadership of all those agencies to involve all key stakeholders expected to participate in the first response in an agricultural emergency. In addition, training needs to follow planning at all levels, including the strategic level, to develop an understanding of who is in charge, and the capabilities of all parties. Only then can an effective response happen in the event of an agroterrorist event.

Endnotes

¹ U.S. General Accounting Office, GAO-05-214 - *Much is Being Done to Protect Agriculture from a Terrorist Attack, but Important Challenges Remain*, Mar 2005, (Washington DC: U.S. Government Printing Office, 2005), 1.

² Peter Chalk, "Hitting America's Soft Underbelly, The Potential Threat of Deliberate Biological Attacks Against the U.S. Agricultural and Food Industry": ix, available at http://www.rand.org/pubs/monographs/2004/RAND_MG135.sum.pdf, Internet, accessed on 12 October 2008.

³ Tamara M. Crutchley, Joel B. Rodgers, Heustis P. Whiteside, Jr., Marty Vanier, Thomas E. Terndrup, 2007. "Agroterrorism: Where Are We in the Ongoing War on Terrorism", *Journal of Food Protection*, 70:3, 791.

⁴ Anne Kohnen, 2000. "Responding to the Threat of Agroterrorism: Specific Recommendations for the United States Department of Agriculture", *BCSIA Discussion Paper 2000-29, ESCP Discussion Paper ESDP-200-04*, John F. Kennedy School of Government, Harvard University, October 2000.

⁵ Jim Monke, 2007. *RL32521 – Agroterrorism: Threats and Preparedness*. Available online at http://www.congress.gov/erp/rl/html/RL32521.html#TOC1_1. Updated March 12, 2007.

⁶ "Food and Agriculture Incident Annex," 2006. *National Response Plan*, July 17: 2, available online at http://www.learningservices.us/pdf/emergency/nrf/nrp_foodagincidentannex.pdf, accessed 10 May 2009.

⁷ Crutchley, et. al: 792.

⁸ "Critical Infrastructure and Key Resources Support Annex, Appendix A", 2008, *National Response Framework*, available online at <http://www.fema.gov/pdf/emergency/hrf/nrf-support-cikr.pdf>, accessed 28 Mar 09.

⁹ Monke.

¹⁰ Evan Ramstad. 2008. "Seoul Unlikely to End U.S. Beef Ban," *Wall Street Journal*, April 11, available online at http://www.citizenstrade.org/pdf/wsj_seoulbeefban_04112008.pdf, accessed 9 May 2009.

¹¹ GAO-05-214: 4.

¹² George W. Bush, 2004. *Homeland Security Presidential Directive – 9, Defense of United States Agriculture and Food*. Department of Homeland Security, January 30, available online at http://www.dhs.gov/xabout/laws/qc_1217449547663.shtm#1, accessed 10 May 2009.

¹³ GAO-05-214: 4.

¹⁴ Executive Summary, *National Infrastructure Protection Plan*, available online at www.dhs.gov/nipp, accessed 12 October 2008: 3.

¹⁵ GAO-05-214: 5.

¹⁶ Ibid: 6.

¹⁷ David A. Ashford, Thomas m. Gomez, Donald L. Noah, Dana P. Scott, David R. Franz. 2000. "Biological terrorism and veterinary medicine in the United States," *Journal of the American Veterinary Medical Association*, 217:5.

¹⁸ Kimberly M. Thompson, Robert E. Armstrong, and Donald F. Thompson. 2005. "Bayes, Bugs, and Bioterrorists; Lessons Learned from the Anthrax Attacks," *Defense and Technology Papers*, Center for Technology and National Security Policy, National Defense University, Available online at <http://www.ndu.edu/ctnsp/publications.html>. Internet. Accessed

¹⁹ *Exotic Newcastle Disease Information*, Birds n Ways; Guide to Parrots and Exotic Pet Birds, available online at <http://www.birdsnways.com/newcastle/>. Internet. accessed 9 May 2009.

²⁰ Chalk: 34.

²¹ Michael R. Taylor. *The Recent Salmonella Outbreak: Lessons Learned and Consequences to Industry and Public Health*, Testimony before the Subcommittee on Oversight and Investigations Committee on Energy and Commerce United States House of Representatives, 21 July 2008: 6.

²² Crutchley, et.al: 796.

²³ GAO-05-214: 9.

²⁴ Ibid: 52.

²⁵ Taylor: 6.

²⁶ Crutchley, et. al: 796.

²⁷ GAO-05-214: 40.

²⁸ Ibid: 44.

²⁹ Ibid.

³⁰ Ibid: 37.

³¹ Ibid: 7.

³² U.S. General Accounting Office, GAO-08-868T - *Emergency Management: Observations on DHS's Preparedness for Catastrophic Disasters*, Testimony before the Subcommittee on Management, Investigations, and Oversight, Committee on Homeland Security, House of Representatives, (Washington D.C.: U.S. Government Printing Office, 2008): 8.

³³ Ibid.: 9.

³⁴ Ibid.: 10.

³⁵ Crutchley, et.al: 795.

³⁶ Joseph W. Trindal, "Lessons Learned: Domestic Emergency Preparedness Exercise," *Evaluation Criteria: Strategic vs. Tactical Approaches*: 3, available online at <http://www.mors.org/meetings/hls/presentations/trindal.pdf>. Internet, Accessed 10 May 2009.

³⁷ Ibid.

³⁸ "After Action Quick Look Report," *National Exercise Program (NEP)*, November 19, 2007: 7, available online at <http://www.docstoc.com/docs/832480/Department-of-Homeland-Security-National-Exercise-Program-NEP-After-Action-Quick-Look-Report-Top-Officials-TOPOFF-pages-November>. Internet. Accessed 10 May 2009.

³⁹ Thompson, et al: 27.

⁴⁰ *Special Event Food Defense Assignment (SEFDA) Report*, September 2008, available online at <http://www.cfsan.fda.gov/~dms/sefda08.html>. Internet. Accessed 10 May 2009.

⁴¹ *Produce Safety Project*, "Breakdown: Lessons to be Learned from the 2008 Salmonella Saintpaul Outbreak," November 17, 2008: 1. Available online at <http://www.producesafetyproject.org/admin/assets/files/0015.pdf>. Internet. Accessed 10 May 2009.

⁴² Ibid.: 4.

⁴³ Taylor: 6.

⁴⁴ Produce Safety Project: 5.

⁴⁵ Ibid.: 9.

⁴⁶ Ibid.

⁴⁷ Taylor: 6.

⁴⁸ Produce Safety Project: 11.

⁴⁹ Ibid.

⁵⁰ Donald F. Kettl, 2005. "The Worst is Yet to Com: Lessons from September 11 and Hurricane Katrina," *Fels Government Research Service Report 05-01*, Penn Arts and Sciences, Fels Institute of Government, September: 6. Available online at <http://www.tcf.org/Publications/HomelandSecurity/Worstisyettocomekettl.pdf>. Internet. Accessed 10 May 2009.

⁵¹ Ibid.

⁵² Kettl: 7.

⁵³ Ibid.

⁵⁴ Rebecca Berg, 2008. "The Emergency Response: A Great Story," *Journal of Environmental Health*, Vol. 71, Iss. 2: [database on-line]; available from ProQuest: accessed 5 January 2009.

⁵⁵ Nicholas J. Neher, 1999. "The Need for a Coordinated Response to Food Terrorism: The Wisconsin Experience," *Annals of the New York Academy of Sciences*, Vol. 894, 181.

⁵⁶ Ibid: 182.

⁵⁷ Ibid.

⁵⁸ GAO-05-214: 57.

